



Agreement on the Conservation
of Albatrosses and Petrels

**Eighth Meeting of the Population and Conservation
Status Working Group**

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**ACAP Secondment: Burrowing Seabird
Detection Dog Report**

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ACAP Secondment: Burrowing Seabird Detection Dog Report

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1. Introduction and background

An ACAP (Agreement for the Conservation of Albatrosses and Petrels) Secondment Grant was awarded in February 2023 to Green Hound Limited, known as South Atlantic Detection Dogs (SADD)¹. The project aimed to learn from burrowing seabird and endangered species detection dog teams in New Zealand (NZ) and apply that learning in the Falkland Islands to develop burrowing seabird detection dog capacity locally.

Detection dogs are used throughout the world to support this type of conservation action to great success. For the past 5 years, SADD has provided detection dog services to check vessels and cargoes headed to the rodent-free UK Overseas Territorial islands of South Georgia & South Sandwich Islands and the Falklands Islands to ensure no rodents will re-invade and put seabirds under threat. The dogs have also been trained to confirm rodent-free status of islands recently cleared of rodents and to provide regular monitoring checks on high value tussac islands, which can be key breeding areas for a range of seabirds including ACAP-listed species such as White-chinned Petrels (WCPs).

A further application of detection dogs is to use them for both burrowing seabird surveys and detecting occupancy. This method is recognised by ACAP (see, [ACAP Burrowing Petrel Survey Guidelines, 2020](#)). The NZ Conservation Dogs Programme (NZCDP) has been using dogs for pest detection & threatened species detection for many years. NZCDP manage several well-established detection dog-teams, which have been deployed locally and internationally to lead on a range of eradication and survey work. Dog-teams undertake a rigorous training process and NZCDP have developed a comprehensive training programme. The NZ dog-teams are widely regarded as international leaders in this field.

SADD was established to meet the needs of the Government of South Georgia & South Sandwich Islands' rodent detection dog programme and is gradually increasing capacity and applications for dog-teams. SADD's focus is on using locally sourced dogs and local handlers to support specific conservation issues in the South Atlantic.

With additional training there is a wider scope of services the team could provide to support conservation in the South Atlantic. For example, the range and number of WCPs on South Atlantic Islands is not well understood. Censuses are challenging and require skilled practitioners to identify suitable habitats to survey, and, as noted in the ACAP Burrowing Petrel Survey Guidelines (2020), census methods are not always accurate. Actions to address these challenges are also identified in the UK's ACAP Implementation Plans.

This project sent SADD's senior dog handler, Naomi Cordeiro, on secondment to NZ to undertake bespoke training sessions with the NZCDP detection dog teams. The trip was co-ordinated with Miriam Ritchie (Canine Conservation) and James Fraser (Department of Conservation (DOC)).

This provided Naomi with first-hand experience and understanding of the intricacies of burrowing seabird surveys with dogs, the safety measures needed as well as all other nuances and details that cannot be learned remotely.

¹ See here for further information:
https://www.instagram.com/south_atlantic_detection_dogs/
<https://www.facebook.com/SABDetectorDogs>
<https://twitter.com/SammySniffer>

Longer term, training up a burrowing seabird detection dog locally and building this capacity in the South Atlantic will enable additional dogs and handlers to be trained, thereby increasing capacity of conservation detection dog-teams in the region.

Long-term benefits of this project include:

- A certified, locally-based detection dog-team in the South Atlantic, capable of conducting surveys and censuses.
- Capacity to train additional dog-teams, with potential to expand to other priority species.
- Enhanced capability of the UK's ACAP programme to incorporate improved survey techniques, resulting in better understanding of population trajectories, and development of robust conservation management actions/strategies.

Overall, this secondment provided an invaluable opportunity to develop and grow local knowledge in the UK's South Atlantic Overseas Territories by learning directly from world-leading experts and help to forge a valuable partnership and knowledge network between the secondee (Naomi Cordeiro – SADD) and host institution (NZCDP).

1.1 ACAP Objectives

This project relates to the following ACAP Objectives:

- Agreement Objectives:
 - Article III b)** eliminate or control non-native species detrimental to albatrosses and petrels, **d)** initiate or support research into the effective conservation of albatrosses and petrels, **e)** ensure the existence and appropriateness of training for, *inter alia*, the implementation of conservation measures, and
 - f)** develop and maintain programmes to raise awareness and understanding of albatross and petrel conservation issues;
 - Article IV 2.** The Parties shall give priority to capacity building, through funding, training, information and institutional support, for the implementation of the Agreement;
 - Article V f)** undertake exchange of expertise, techniques and knowledge;
 - Annex 2** The Parties shall take all feasible action to prevent the introduction to habitats, deliberately or otherwise, of non-native taxa of animals, plants or hybrids or disease-causing organisms that may be detrimental to populations of albatrosses or petrels;
 - Annex 2, 4.1** Parties shall seek to undertake research and monitoring in order to fulfil the requirements of Article III... Where appropriate they shall so do co-operatively, and shall seek to facilitate the development of improved research and monitoring techniques.

2023-2025 Advisory Committee/PaCSWG work programme:

- 2.1** Consider gaps in population, tracking, breeding site management, threats and regulatory protection data submitted to ACAP.

UK ACAP implementation plans:

- Address priority actions identified to undertake research and monitoring of WCPs to better understand their status and trends, with a focus on long-term monitoring.

2. New Zealand trip

The Secondee (SADD Senior Dog Handler, Naomi Cordeiro) undertook a 3-week trip to NZ in August 2023. Working with the NZCDP detection dog teams, Naomi undertook a range of activities such as observing training and live searches to understand how dogs can be used to detect burrowing seabirds. The full schedule and activities are provided in Table 1.

Table 1. Schedule and activities undertaken during handler’s visit to New Zealand

Date	Location	Activity
7 th August	Auckland	Arrive Auckland airport, travel to Hikurangi (Miriam Ritchie)
8 th August	Hikurangi - Kaitaia	Travel to Kaitaia
9 th August	Kaitaia – Hikurangi	Training with K9 Yagi (dog trained to detect kiwi birds) and handler Leslie
10 th August	Hikurangi	Training with James McLaughlan’s kiwi detector dog (on surrogate bird) and pup in training
11 th August	Hikurangi - Cambridge	Travel to Cambridge
12 th August	Cambridge	Visit to Maungatautari (Sanctuary Mountain) ecological island
13 th August	Cambridge	Live search with Martin and K9 Ash (kiwi detector dog) health checks on kiwi chicks in Warrenheip creche (see Figure 1)
14 th August	Cambridge	Visit to training facility Guus Knoppers, Te Puke
15 th August	Cambridge – New Plymouth	Travel to New Plymouth
16 th August	New Plymouth, Taranaki	Meet Jo Carson and K9 Pip (dog in training) and visit to Taranaki Reserve
17 th August	New Plymouth - Napier	Travel to Napier, meeting with Tamsin (kiwi detector dog handler)
18 th August	Napier - Wellington	Travel to Wellington
19 th August	Wellington	Rest day
20 th August	Wellington	Visit to Miramar peninsula
21 st August	Wellington – Huntersville - Rotorua	Travel to Huntersville to meet Jo Simms (seabird detector dog handler), continue on to Rotorua
22 nd August	Rotorua	NZCDP Annual Conference
23 rd August	Rotorua	
24 th August	Rotorua	NZCDP Target Workshop (see Figure 2)
25 th August	Rotorua - Auckland	NZCDP Target Workshop, travel to airport

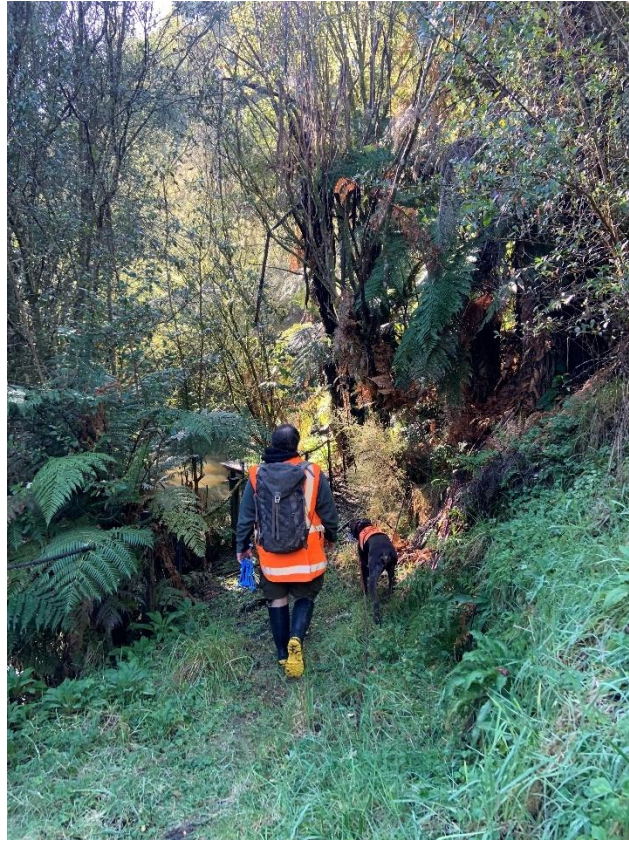


Figure 1. Martin and K9 Ash searching in Warrenheip kiwi sanctuary



Figure 2. A demonstration at the NZCDP Detection Dog Annual Conference

2.1 Key lessons from New Zealand handlers

- A big emphasis was put on choosing the right dog for the job and checking its safety around birds before progressing. This was done by testing the dog's impulse control and then slowly introducing it to birds to gauge and manage its natural reaction.
- Managing the balance between drive to search and calmness around wildlife was noted by multiple handlers.
- It was also emphasised through talking to handlers and by the NZCDP's certification process that it is important to take the time needed for training and not to rush the process.
- It is very important to understand what type of survey data is required before dog training commences as this may influence training plans.
- It was considered beneficial for a dog to be trained on multiple targets – i.e. to be able to detect a number of burrowing bird species as this can help with training; when some species are absent, others may be present to allowing training to continue. The less specific the dog is, the less training effort is required for training the dog 'off' certain bird species. Allowing the dog to search for 'any' burrowing bird can lead to interesting discoveries and increase the dog's motivation. A number of handlers recommended training a dog in the Falklands on multiple species.

3 Training the Falkland Islands Burrowing Seabird Detection Dog

3.1 Choosing the target and research licences

One of the key learning points from the secondment and working with handlers in NZ was the importance of handlers to meet with bird specialists early on to gain an understanding of what kind of surveys are required. This includes, determining what the dog's target (i.e. species) should be, the best time (in the bird's life-history cycle) to undertake searches so that appropriate data is collected, where searches are likely to take place, and how to find examples of the target(s) for the initial training etc.

Therefore, upon returning from NZ, the Secondee established a small Expert Group in the Falkland Islands consisting of the following:

- Dog Handler: Naomi Cordeiro
- Dog Owner: Steve Brown
- Seabird specialists from:
 - Falklands Conservation: Ross James, Andy Stanworth, Amanda Kuepfer
 - South Atlantic Environmental Research Institute: Al Baylis
 - Island Landcare: Sally Poncet, Ken Passfield
 - Joint Nature Conservation Committee: Megan Tierney

Through a series of meetings and email correspondence the Expert Group agreed:

- K9 Missy would be trained up as the detector dog;
- Which targets would be collected for initial training - i.e. feathers, dead birds, nesting material - and these would be collected opportunistically by seabird scientists working in the Islands;
- What species would be targeted i.e. any live bird, regardless of species, but initial focus would be white-chinned petrels (WCP), *Procellaria aequinoctialis*, Magellanic penguins, *Spheniscus magellanicus*, sooty shearwaters, *Ardenna grisea*; and
- Other targets may be considered in the future to add to the dog's target library, or future dogs may be trained on just one specific species if that becomes a requirement for a specific project.

After the first meeting, SADD applied to the Falkland Islands Government (FIG) for the appropriate licences to be able to work the dog around the live birds, to confirm presence/absence of birds in burrows using a burrowscope, and to collect target for training. This application was approved.

Further details on the Expert Group's discussions are summarised in Appendix 1.

3.2 Training the dog

K9 Missy (see front cover photo) had been through some training with SADD in the past and had shown a particularly passive nature when it came to live animals (rodents at the time). This trait and her keen search ethic made her a suitable candidate to trial as a burrowing seabird detection dog. K9 Missy is a 6 year old border collie who started life on a farm but was not taken forward as a working sheep dog. She was therefore rehomed as a pet. Her new owner continued to work with her playing search games and she has shown a keen aptitude for detection work.

3.2.1 Target odour

Training began with introducing the dog to the bird odour (imprinting). This was done with Magellanic penguin and sooty shearwater feathers, due to the fact these are easily accessible (both the target for

collection and colonies for training). As K9 Missy had already been trained in the basics of detection she responded quickly to imprinting on feathers. Early sessions were focussed on making a positive association with the bird odour. This is done by allowing the dog to smell the odour and ‘paying’ the dog. For K9 Missy her payment or reward is a ball or food-based treats. Once the dog recognises that the odour means payment, the odour will be hidden from the dog and the dog will learn to search for the odour. This is an incremental process starting with very easy ‘hides’ where the dog sees the odour being hidden, gradually increasing the difficulty so the dog must search an area to find the odour. The training employed is always positive; the dog is never ‘punished’ for not finding the odour or getting it wrong, and training is set up so that the dog is always able to ‘win’.

3.2.2 Impulse control

Parallel to introducing the odour to the dog, impulse control was tested and a muzzle was introduced.

K9 Missy was known to be a passive dog around animals already but some checks were done to ensure she would be safe around live birds. Although the majority of the birds would not be out in the open but down in a burrow, there is always the chance that a bird might be sitting on the surface and bird safety is paramount.

Impulse control was tested by using a surrogate bird, in this case a chicken, to introduce the dog to a live bird in a controlled manner. The chicken was placed in a cage and the dog was brought slowly into the area. Her general interest in the bird was noted and her natural reaction was to avoid the bird, rather than show any aggression or too much interest, which was very positive. K9 Missy was very calm and cautious, which meant we were able to introduce her slowly to the Magellanic penguins at one of the training sites located at Rookery Bay, Falkland Islands.

K9 Missy was slowly introduced to wearing a muzzle, which she tolerated but was never completely comfortable wearing. Eventually she was able to do very short searches of a minute or so wearing the muzzle. However, we found that she would then stop and paw at the muzzle, indicating she was clearly uncomfortable wearing it. Latterly, it was determined that the muzzle was not necessary for K9 Missy having conducted further impulse control testing, speaking with other burrowing seabird teams around the world (see Section 4) and following an independent review by [Conservation K9 Consultancy](#) (see Section 3.2.4).

3.2.3 Training around live birds

K9 Missy was slowly introduced to the Magellanic penguin colony at Rookery Bay. Initially, sessions started by taking her around the colony at a safe distance, on a lead and initially wearing a muzzle. She was very calm and was able to follow basic commands, which meant we were able to move closer incrementally until we were walking amongst the burrows in the colony.

An assistant was always with the dog team during burrowing bird searches. To start with, they would walk ahead and note which burrows were occupied. The dog was then taken to each burrow and rewarded if she identified an occupied burrow correctly. K9 Missy gives a sit or down indication when she finds an occupied burrow and was initially rewarded with a ball and/or food treats.

Searches were repeated throughout November and December 2023 and then in January 2024, Louise Wilson of Conservation K9 Consultancy visited the Falkland Islands to give dog training support and to independently assess K9 Missy (see Section 3.2.4).

Following Louise's visit, K9 Missy's reward was changed to a 'goody ball' (a ball which has treats inside), as this was a better fit to manage her energy, giving her enough of a boost to continue searching but with cheese inside, which helped to keep her calm and focussed.



Figure 3. K9 Missy is rewarded for a good search around Magellanic penguin burrows with a 'goody ball' toy

While Louise was in the Falkland Islands, time was also spent working with K9 Missy in the dense tussac areas as this is a very stimulating place for dogs to search and stay focussed. K9 Missy showed a natural aversion to sea lions but otherwise was happy to search in and around tussac.

Following Louise's visit in January, training expanded to include targeting on sooty shearwaters at the training site located at Hadassa Bay, Falkland Islands.

K9 Missy picked up the occupied sooty shearwater burrows very quickly (she works very fast) however, she started to find it frustrating when she would indicate on a burrow and the handler could not confirm (quickly) if there was a bird present. This causes a problem as frustration can come out as barking, which is not suitable around burrows and can also lead to demotivating the dog, meaning she might miss burrows.



Figure 4. Sooty shearwater burrows in tussac were marked up to enable the handler to see immediately whether the dog was indicating on an occupied burrow

To aid in training and to combat K9 Missy's frustration, and to test her accuracy, a discrete area (roughly 5m x 20m of tussac on a slope) was marked out and every single burrow was checked with a burrowscope to confirm occupancy. Occupied and unoccupied burrows were marked with different coloured tape (see Figure 3) so it was immediately obvious to the handler when they were searching with the dog, which burrows had birds present or not.

It took two humans 32 minutes doing a very thorough search to find and confirm whether all burrows (roughly 15) in the search area were occupied or not. The dog team were brought in to search the same area and completed the search in 7 minutes. K9 Missy did not indicate on any unoccupied burrows, she missed one occupied burrow that had been identified by the humans but found another occupied burrow that had been missed by the humans. This is very encouraging for future surveys as it indicates the dog's accuracy is high (at least as high as a thorough human search), and that she is

able to cover an area much more quickly than a human team. The dog's accuracy and efficiency will be further tested at a future date (see Section 7).

Alternate methods are being trialled to circumvent K9 Missy's frustration, such as trying different 'markers', and using a variable reward system, which have so far had a positive effect.

One of the next steps in the training programme will be to trial K9 Missy on WCPs. As all WCP colonies in the Falklands are on offshore islands, this will involve arranging logistics to visit these islands. WCP feathers have been collected and these will be used over the Austral winter to train K9 Missy on the target, with trials on live birds/burrows planned for early in the WCP 2024-25 breeding season.

While it may have been possible to initiate the training on WCPs in the 2023-24 breeding season, the decision to delay was taken to ensure the dog team's skills were more fully honed before introducing a further species. As was emphasised and learnt from the secondment to NZ, it is paramount that training is progressed at the right pace for the dog. Rushing the dog before they are ready can have negative consequences, so taking it slowly is always the preferred path.

However, now that K9 Missy has proven successful, we can look to other potential dogs in the Islands if there is a specific need for a particular specific target or project which K9 Missy would not be suitable for. With sufficient time and training another dog could be trained up and utilised to support other burrowing bird census projects.

3.2.3 Third party review

Louise Wilson from Conservation K9 Consultancy visited the Falkland Islands in January 2024 to give dog training support and to assess the handlers and dogs under SADD. Louise has worked with a number of conservation detection dog teams around the world and is contracted by SADD to provide remote support and annual visits.

Louise watched K9 Missy work around Magellanic penguin burrows and advised on changing the reward from just food to a goody ball (ball with treats inside), which resulted in a motivated search but retained the calm behaviour needed around the birds.

Louise also recommended:

- Assessing harness and looking for a harness with less body coverage;
- Considering the search strategy (to be done in conjunction with bird scientists once survey objective agreed);
- Adding bedding and licky mat to crate in the vehicle for comfort; and
- Considering the 'ritual' before starting work to differentiate it from a walk.

Overall, Louise considered K9 Missy a good fit for this type of work and was impressed by her compassionate behaviour around wildlife. Conservation K9 Consultancy's full assessment of K9 Missy is provided in Appendix 2.

3.2.4 Summary

Utilising the information and training received in NZ, SADD was able to identify a suitable dog for burrowing seabird work in the Falkland Islands. Impulsivity testing learned in NZ was used to confirm the dog choice and to design a suitable training programme. Ultimately, the skills learned from the NZCDP dog teams allowed a dog to be trained up to detect burrowing seabirds, showing that dogs can be used in the South Atlantic to detect burrowing seabirds successfully.

K9 Missy was a good choice for this project, her keen search ethic coupled with calm and respectful nature around birds made her an excellent fit. Choosing the right dog from the start made the rest of the training relatively easy.

Training on surrogate birds was somewhat useful to test her impulse control and response to live birds in close proximity. However, the most useful test was taking her to a penguin colony as this was a more realistic scenario.

While wearing a muzzle was not considered necessary in the longer-term for K9 Missy, it is a useful tool to include for any new dogs encountering wildlife in such close proximity. If K9 Missy had been a novice dog this would also have been a useful exercise to train the dog in a new skill, which helps when learning any new skill in future, and helps them bond with the handler.

Using Magellanic penguins as a starter bird made confirmation much easier so the dog was able to learn quickly what we were looking for. As we commenced in November, we were able to search for both adults and chicks. K9 Missy displayed slightly different behaviour when encountering a chick versus an adult in a burrow. She also learned to check well into apparently empty burrows often going in closer to check before deciding they were empty. Some burrows also had abandoned eggs, which the dog did not indicate on but showed interest.

Moving to sooty shearwater burrows where immediate confirmation is not possible was challenging and required much more preparedness from the humans. A lot of time was spent burrowscoping and doing thorough searches of an area to ensure all burrows had been found before taking the dog in to search.

Understandably, not being rewarded on a correct find (i.e. if the dog finds an occupied burrow but the handler cannot confirm) is frustrating for the dog. This is a problem encountered with other burrowing bird teams and needs to be managed by a mixture of re-finding known occupied burrows or acknowledging the find with a smaller reward and, when possible, confirming the find with a torch or feeling the heat within a burrow to make a quick but considered assessment of the dog's find.

Further training over the Austral winter is proposed to continue adding to K9 Missy's target library and to prepare her for operational searches in 2024-25 season, see Section 7.

4 Contact with other burrowing seabird detection dog teams

In addition to the NZCDP dog teams, the Secondee also made additional contacts with Northern Ireland based dog teams run by Caroline Findley of Conservation Detection Dogs Northern Ireland ([CDDNI](#)). This was a useful group to talk with as they have been conducting burrowing bird surveys for a number of years, though they have been somewhat hampered by the recent outbreaks of Highly Pathogenic Avian Flu. They advised they do not use muzzles during searches as the dogs they choose do not pose a threat and the birds they search for are deep in burrows. They also provided advice on taking and keeping samples for training when birds are not in burrows.

CDDNI also advised contacting [K9 Man Hunt & Scentwork Scotland](#) who trained 5 detection dogs to survey for storm petrels, *Hydrobates pelagicus*, on the Isle of May in Scotland. Plans are in place for the Secondee to visit and work with K9 Man Hunt & Scentwork in 2024.

Continued contact with NZ burrowing seabird handlers has also been invaluable as they have also come across similar issues in the dog becoming frustrated when finds could not be confirmed and have been able to advise on how to deal with issues.

5 Financial summary

A total of AUD\$12,300 was awarded from the ACAP Secondment programme, which was primarily used for flights and accommodation in NZ. Matched funding was provided by SADD and NZCDP to cover the following:

- Salary expenses for the dog handler for the duration of the secondment (SADD);
- Training and certification/assessment of the dog team on return from NZ (SADD);
- Staff time, facilities and expertise (NZCDP); and
- Accommodation and attendance for Naomi at the NZCDP Annual Conference (NZCDP).

A summary of all costs supported by the ACAP grant are provided in Table 2.

Table 2. ACAP Secondment grant expenditure.

Item (detail)	Cost (£GBP)	Cost (AUS \$)
Flights (FI to NZ return)	£2,081.00	\$3,981.62
Accommodation (NZ)	£1,066.75	\$2,041.03
Car hire (NZ)	£489.88	\$937.30
Subsistence (NZ)	£977.36	\$1,870.00
Training kit	£212.08	\$405.78
TOTAL	£4,827.07	\$9,235.43
Grant remaining	£1,923.05	\$3,064.57

It is proposed that the remainder of the funds is used in the 2024-25 Austral summer season to access WCP colonies on offshore islands. Here, K9 Missy will add WCP to her target library and gain experience travelling on vessels, as well as working on tussac islands, which is where future burrowing seabird surveys are most likely to take place.

6 Outreach

A number of social media posts were made throughout the project showing the progress of K9 Missy's training (e.g. Figure 5).

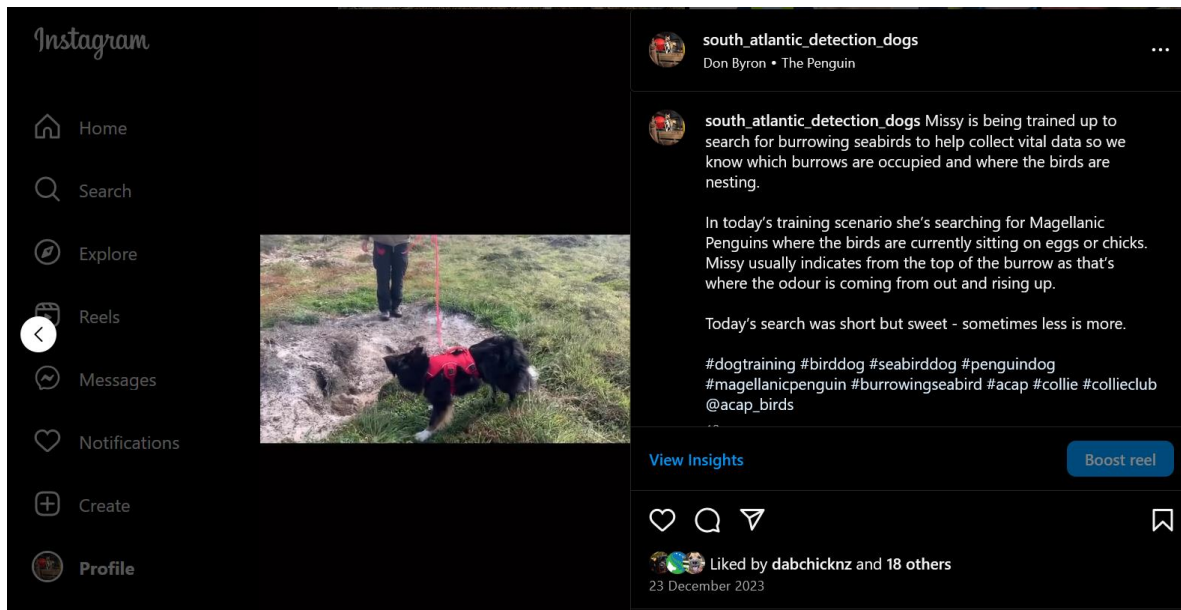


Figure 5. Social media post on SAAD Instagram account.

This project has also produced:

- A project report (this document) outlining the secondment and key points or actions from the training programme.

Future, planned outreach includes:

- An Information Document (this report) will be submitted to the PaCSWG outlining the use of detection dogs in the South Atlantic, and which incorporates details of the secondment programme.
- Presentations at relevant stakeholder group meetings, conferences and seabird forums.
- A public talk on the dog detection programme, the training that was undertaken as part of this secondment and how the new skills will be implemented and built into the work of the dog detection teams and conservation programmes. Presentations will be both in person and made available online.
- Articles in local media to share the story of the secondment and benefits to seabird conservation programmes.

7 Conclusion and forward plans

Following a very successful trip to NZ and with the extensive hospitality and patience of everyone met there, the Secondee was able to learn an enormous amount from the handlers in the NZCDP programme who have a wealth of knowledge from many cumulative years of experience. It was an invaluable trip and made it possible to start training a burrowing seabird dog in the South Atlantic, with many new contacts to discuss the approach and training with.

K9 Missy took to the training extremely well and was an excellent choice of dog for this type of work. It is planned to continue training K9 Missy over the Austral winter on samples already collected, and then into the next breeding season when the birds return to the Islands. The remainder of the grant will be used over 2024-25 to make trips to the offshore islands with WCP colonies thereby expanding the dog's target library and gaining experience in a more realistic 'survey' scenario, preparing K9 Missy for operational searches.

A number of steps to progress training and utilisation of the detector dog for burrowing seabird surveys have been identified, including:

- Conducting specific training with K9 Missy, taking her on boats to islands and adding WCP as a target odour;
- Design a survey which includes a detector dog element with input from the Expert Bird Group. (NB: several proposals are currently in preparation and will be submitted to funding bodies in 2024);
- Conduct trials such as those outlined in Section 3.2.3 to determine how accurate the dog is at detecting occupied burrows and how quickly the searches can be done in comparison to human-only searches;
- Determining if it is possible to 'calibrate' the detector dog searches using a thermal-imaging drone flown over burrowing sea-bird colonies; and
- Broader and longer-term planning of burrowing seabird surveys in the South Atlantic, and determining where a detector dog may be a useful addition to the survey team.

There has also been a lot of interest from the local community and visiting seabird researchers to come and watch the searches and to be involved.

Appendix 1 – Falklands Burrowing Seabird Detection Dog Scope

Falklands Burrowing Seabird Detection Dog Scope

Naomi Cordeiro, South Atlantic Detection Dogs, 05.02.24

Background and objective

South Atlantic Detection Dogs was awarded an ACAP (Agreement for the Conservation of Albatrosses and Petrels) grant to visit New Zealand’s Department of Conservation in 2023. The skills and techniques learned during this visit would then be applied to the Falklands by training up a local dog to search for burrowing seabirds. This would help with burrowing bird censusing with the long term goal being to have a burrowing seabird detection dog trained up in the Islands.

Where we are at the moment (Jan 2024)

- Missy, the dog being trained, was initially trained on feathers from sooty shearwaters and magellanic penguins (due to availability of target odour). We soon progressed to searching for live birds so as not to encourage an indication on dead birds or feathers. To date she has been training almost exclusively on magellanic penguins. This was a training decision based on the ease with which the handler, or assistant, can verify the presence of absence of a bird in a burrow, as well as easy access to large colonies near to Stanley.
- Missy is consistently correctly identifying adults and chicks in burrows, has proven to be very safe around wildlife, and is motivated to search.
- Louise Wilson from Conservation K9 Consultancy came to assess Missy in Jan 2024 and confirms she is a good choice for this type of work. She notes that Missy shows “no concern to birds or chicks” during the search. Louise also helped with rewarding Missy so that we are able to manage her energy levels during searches.
- Missy has shown she is able to work with a muzzle on but we have found that this is not necessary due to her natural avoidance of the birds and the fact that the birds are in a burrow during searches. The dog also finds it uncomfortable and will scratch at the muzzle if it is on too long, which is not ideal for the welfare of the dog. The muzzle was suggested after visiting the NZ detection dogs (searching mainly for kiwi, which nest on the ground) where it is used as a precaution. Since visiting NZ I have spoken to dog teams in Northern Ireland and Scotland who also search for burrowing seabirds and do not find it necessary to use a muzzle. As such, I have applied to FIG for an amendment to the research licence to remove the requirement for a muzzle for Missy during burrowing seabird searches, which has been approved.

The discussion

A group of people involved in bird surveys first gathered together on Fri 1st Sept 2023 to discuss the use of a burrowing seabird detection dog. Since then, we have kept in email contact and a list of participants is given below. Note Andy, Amanda and Steve were not at the initial group meeting but have been involved in the email discussions since.

- Falklands Conservation: Ross James, Andy Stanworth, Amanda Kuepfer
- Island Landcare: Sally Poncet, Ken Passfield
- JNCC: Megan Tierney
- SAERI: Al Baylis
- Missy’s owner: Steve Brown

The main discussion point during the meetings and subsequent emails was around whether the dog should be a generic ‘any live burrowing bird’ detection dog or a species-specific detection dog. The below table sets out an overview of the preferences (where indicated) benefits and drawbacks of all the options discussed and the implications for each option in terms of dog training and success.

Option for target species	Benefits	Drawbacks	Preferences and implications
Sooty shearwater only	<ul style="list-style-type: none"> - Visually difficult to verify sooty burrows versus prions and petrels - Sooty shearwaters are Near Threatened - Ongoing surveys and more planned in future 	<ul style="list-style-type: none"> - Extra burden on training – need regular access to all non-target bird species to confirm dog is on the right species and to correct her if indicating on a the wrong spp - During operations dog may indicate on Mag penguins as this was the first spp trained - Over a longer search day the dog may indicate on other burrowing bird species if sooty shearwaters are not present due to fatigue - If the dog was used to search in an area where the spp are unknown, she will likely not indicate on any non-target spp so these will be missed (although might be of interest?) 	Preferred option by FC and Sally P
Any live bird in a burrow	<ul style="list-style-type: none"> - Would support population censuses of penguins, prions and petrels - Makes training relatively easy 	<ul style="list-style-type: none"> - Burrows would still need to be burrowscoped if it is unclear what species is inside 	Preferred option by AI
Compromise: sooty, magellanic penguin and white-chin petrel	<ul style="list-style-type: none"> - WCP are Vulnerable and an ACAP spp - Sooty Shearwater are Near Threatened - Makes training relatively easy 	<ul style="list-style-type: none"> - Magellanic penguins are Least Concern (although little is known about their numbers) so not high on priority list 	Preferred option by Megs and Naomi

Option for target species	Benefits	Drawbacks	Preferences and implications
		<ul style="list-style-type: none">- Will require access to non-target species to make sure the dog only indicates on the three targets species- May still require burrowscoping to confirm spp if unclear visually during survey	

Conclusions

A note on dog training

From a dog training perspective, keeping the targets wider, as opposed to more specific, is more manageable and this is mostly down to ensuring the specificity of the dog. If the dog is only finding one species, a lot of training will go into making sure the dog is *not* finding any other burrowing bird species. This includes having **all** ‘non-target species’ feathers etc available year round and spending time at non-target species burrows to determine occupancy and actively discourage the dog from indicating on them. The risk here is that during real surveys, which may last all day, the dog might look for an ‘easy win’ and begin indicating on any species, which will reduce efficiency and effectiveness of the survey.

Also in terms of dog training, it will take some time each season (regardless of target) to get the dog back into searching for live birds. While we can work on searching for feathers etc over the winter period, the dog will take a few weeks to transition back to looking for live birds having only found feathers and pelts (for example) for most of the year. The dog may equally have a rest period over winter but again, the same refresher will be needed before going into operational surveys.

In terms of managing expectations, it is worth noting that dogs, like all other survey methods, are not 100% accurate. While we will always aim to be as accurate as possible, regardless of target species, there will be times when the dog misses occupied burrows and times when the dog indicates on unoccupied burrows – the level of accuracy can be tested so we can understand the uncertainty. Burrowscoping and human searches will still be required once the dog is operational but the hope is it will reduce search time as the dog can pick out which burrows to burrowscope and/or we can assume the dog is correct X% of the time and only burrowscope X% of burrows the dog indicates on to confirm. All of these issues around survey method will need to be worked out prior to surveys going ahead so they can be tested and trialled. The best outcome will be for the dog to add to the effectiveness and efficiency of searches.

This is the first burrowing seabird dog in the islands, there is no reason we could not train up a second dog with a different target(s). Although finding the right dog with the right temperament and aptitude for the work will be challenging, I have been able to learn a lot from training Missy in this discipline.

ACAP funding, and funding going forward

The ACAP funding for this project stops at the end of March, when I will send in my report to ACAP. Although I have been able to get some additional ESB funding to allow trips to Kidney Island to continue working with Missy and hope to continue training with her year round.

As the only ACAP species noted in the options table is the WCP, I am inclined to include them in the targets to fulfil the ACAP grant requirement.

It would be useful to discuss the longer term work schedule for the dog with all the stakeholders so we can make sure we have the dog trained and ready for next season and funding in place to support the work.

Selected option

To meet the ACAP grant requirement whilst retaining some specificity in the dog search, I propose the compromise of having the dog search for Magellanic penguins, Sooty Shearwaters and WCPs will be the best option for the moment. While it is always possible to change the targets found by the dog going wider (less specific) rather than more specific is much more realistic, so while Missy will likely never work on only Sooty Shearwaters, additional bird spp could be added to her target

library in future. Hopefully this means Missy will be useful for any planned sooty surveys coming up as WCP and Mag penguin burrows should be visually distinctive for the humans to determine during the survey.

Appendix 2 – Conservation K9 Consultancy evaluation of K9 Missy



**EVALUATION OF POTENTIAL
 SEARCH DOG**

Dogs Name: Missy

Breed: Collie

Date/Time of Assessment: 9th JAN 2024

Assessment of Dog

	Unsatisfactory	Poor	Satisfactory	Good	V. Good	Comments
Anticipation				✓		
Drive				✓		
Concentration					✓	
Indication					✓	
Determination			✓			
Agility				✓		
Control					✓	
Free Search				✓		
Systematic Search			N/A			
Seeking System				✓		
Play System				✓		

Other Relevant Dog Information:

Missy seems a perfect fit for this work, her indication on the burrows is perfect + Compassionate.
 Saw less motivated dog when rewarded with food so added Goodyball treat toy + cheese to help with better arousal + play but cheese to help re-calm + focus her. Keeping her balance is key. When too aroused she does give out a 'i' bark but I can't see this being a problem.

- Look at howness if she likes it + do maybe massage before searches or a walk also.
- assess search strategy also.
- Bedding + lucky mat + mats for kennel in vehicle also to make it more comfortable + to help stop Missy pacing at the end of searches.
- Pre-Ritual before searching begins to help her know 'when do a walk' + when do just a working.
- Make sure missy is rewarded at the source also but play away from the burrow.
- Missy shows no concern to birds or chicks
I am so delighted how well she is in these circumstances
- Need sea win introduction also + work around tosses to see how she copes there.